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RE-DEFINE the measures of development and progress

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On 26 February 2020, US President Donald Trump waved a paper with maps and figures in front of the cameras and announced that “the risk [of the new coronavirus] to the American people remains very low” and that “whatever happens, we’re totally prepared”.¹

The paper shown to substantiate the decision to delay any immediate action was the Global Health Security Index (GHSI),² an analytical tool intended to help “countries understand each other’s gaps in epidemic and pandemic preparedness so they can take concrete steps to finance and fill them”.

The expert weight and credibility of the GHSI is based on an international advisory panel of 21 experts from 13 countries that created “a detailed and comprehensive framework... to assess a country’s capability to prevent and mitigate epidemics and pandemics”.³ The data thus gathered are compiled by the Nuclear Threat Initiative, the John Hopkins School of Public Health, and the Intelligence Unit of *The Economist*. The initiative was funded by the Bill & Melinda Gates Foundation, the Robertson Foundation, and the Open Philanthropy Project.

The Gates Foundation is also a major funder of the Global Preparedness Monitoring Board, a high level task force sponsored by the World Health

Organization (WHO) and the World Bank. This board had among its members the chief epidemiologists of the United States and China, doctors Anthony Fauci and Georges Gao. In their first “World at Risk” report (September 2019), they had warned that “there is a very real threat of a rapidly moving highly lethal pandemic of a respiratory pathogen killing 50 to 80 million people and wiping out nearly 5% of the world’s economy, a global pandemic on that scale would be catastrophic creating widespread instability and insecurity”.⁴

After the experiences of Ebola, SARS and the avian flu, it was deemed “likely that the world will continue to face outbreaks that most countries are ill positioned to combat”. The new index was intended to “to illuminate those gaps to increase both political will and financing to fill them at the national and international levels”.⁵ The new pandemic was not a question of “if” but of “when”.

Half a year after the eruption of the COVID-19 global pandemic, the comparison between the assessed “capability to prevent and mitigate epidemics and pandemics” and the actual impact of the new coronavirus, in terms of deaths per million inhabitants, is shocking: Among the fifteen countries better ranked in the GHSI we find many of those with the highest casualty rates (see Table 3.1), while among the ten

1 <https://www.voanews.com/science-health/coronavirus-outbreak/trump-us-totally-prepared-coronavirus>

2 Available at <https://www.ghsindex.org/>

3 “Developing the GHS Index” in <https://www.ghsindex.org/>

4 <https://reliefweb.int/report/world/world-risk-annual-report-global-preparedness-health-emergencies-global-preparedness>

5 “Why is the GHSI needed?” <https://www.ghsindex.org/wp-content/uploads/2019/10/2019-Global-Health-Security-Index.pdf>

deemed the worst prepared we find for example Algeria, which is one of fifteen countries considered “safe” and from which travel to Europe has been allowed since 1 July 2020.

The announced “high preparedness” of the USA and the UK (the top-ranking countries) seems to have led decision-makers in these and other top-ranking countries to feel that they did not need to worry much about COVID-19 when it started in China and then jumped to Italy and Iran in the first weeks of 2020. China was ranked in 51st place and Iran in 97th place in the index (and Italy, in 31st place had the lowest Western European ranking) and it was easy to assume they were suffering because of their unpreparedness.

Thousands of deaths could have been avoided if, instead of downplaying the risks, the perceived certainty of statistics had pointed to the dangers that even the richest countries were facing and thus press for earlier action.

Bad policy decision are the responsibility of the decision-makers, not of the scientists that advise them and the GHSI did include the caveat that “no country is fully prepared for epidemics or pandemics, and every country has important gaps to address”.⁶ But the data clearly indicate that “the average overall Global Health Security Index score totals 40.2 out of a possible score of 100 and 116 high- and middle-income countries do not score above 50”. With scores of around 80 percent, the highest in the world, both Donald Trump and Boris Johnson had good reasons to feel reassured.

Were the numbers wrong? Actually, the GHS report and its index provide an exhaustive compilation of the state and capacity of health services for 195 countries. The information is organized into six categories: prevention, detection and reporting, rapid response, health system, compliance with international norms, and risk environment. The value for each category is defined by several questions

(140 in total) that in turn provide numerical values for a total of 34 indicators, and 85 sub-indicators.

While each indicator is as accurate as possible (with some amount of unavoidable guesswork, e.g., in measuring risks), the way in which they are chosen and weighted together as proxies of complex issues can be problematic.

For example, the first of seven issues that define “prevention” is Antimicrobial Resistance (AMR). AMR happens when microorganisms (e.g., bacteria, fungi, viruses, and parasites) change when they are exposed to antibiotics and develop resistance, thus becoming “superbugs”. AMR is a global problem, as medicines become ineffective and the risk of infections spreading increases. But the indicator for AMR in the GHSI does not measure the intensity of the use of antimicrobials or the percentage of patients with resistant infections, but measures instead four sub-indicators:

1. Is there a national AMR plan?
2. Is there a laboratory that tests AMR?
3. Does the government conduct surveillance activities?
4. Are prescriptions required for using antibiotics in humans and animals?

The USA is a major contributor to global AMR, but it ranks number 8 among 195 countries on that indicator, as it meets most of the tests. Countries that are too poor to actually have excess use of expensive antibiotics could be commended for not adding to this global problem, but instead their ranking is very low, because they lack sophisticated regulations and laboratories.

The USA ranks first in the category of “detection and reporting”, because of its laboratory systems and epidemiology workforce; although its ranking goes down to 117 in the category of “environmental risk”, because of the high urbanization, deforestation and the economic cost of natural disasters. But that high risk is diluted by good performances on other “risks” like infrastructure adequacy, political and security

⁶ <https://www.ghsindex.org/report-model/>

risks and socioeconomic resilience, each of which has a similar weight in the average as the environmental risk.

Similarly, under the “health system” category, the USA ranks in place 175 (only 20 steps away from the very bottom) in “healthcare access”, with only 25 percent. But this huge social problem of lack of access to healthcare, with such a big impact on how the country actually suffered from COVID-19, is diluted when averaged against other sub-indicators such as “capacity to test new medicines” (100%), “communications during emergencies” (100%) or “health capacities in clinics” (60%).

While a new vaccine is being developed, the fight against the pandemic, where successful, has been conducted largely with the century-old tools of quarantine, physical distancing and wearing face masks, and many of the public health recommendations and language used in several countries are strikingly similar to those that were used against the so called “Spanish Flu” of 1918.

Science still has many unanswered questions, such as why Northern Italy suffered more from COVID-19 than the relatively poorer South of the peninsula, or why Eastern Europe was less affected than their richer neighbours of the West. Was it because of better policies, such as early confinement? Or was it due to some different environmental or social determinants, and if so which?

Some early analyses have found “compelling evidence of a positive relationship between air pollution, and particularly PM2.5 concentrations, and COVID-19 cases, hospital admissions and deaths”.⁷ PM2.5 refers to particles in the air that have a diameter less than 2.5 micrometres, typically associated, as in the case of overall air pollution, with fossil-fuel consumption. Similarly, high mortality rates among COVID-19 patients are associated with conditions such as obesity and diabetes, which in turn are “mal-development” or behavioural issues, associated with the consumption of junk food and excess sugar.

By largely ignoring the social and environmental determinants of health and concentrating instead on the infrastructure, advanced technologies and regulatory frameworks, the GHSI ends up being very similar to traditional “development” indices, with a correlation greater than 0.7 with the UNDP Human Development Index (HDI). A correlation of 1 indicates that two measures are identical and a zero that there is no correlation at all. The GHSI claims that it has “a somewhat positive correlation” of 0.44 with GDP per capita. Yet, on a closer look it seems obvious that the index “penalizes” small countries just because they do not have the scale to support some of the high technology health services that the GHSI judges as important for preparedness. Thus Monaco has an Index value of 31.1 while neighbouring France ranks 68. Andorra scores 30.5 while Spain has an index value of 65 and Liechtenstein reaches 43.5 while Switzerland’s value is 67.

If we only consider countries with more than a million inhabitants, the correlation of the GHSI with per capita GDP climbs to over 0.7, which is a high degree of correlation.

Why does it matter?

The high degree of correlation between the GHSI and HDI or per capita income is accepted because it does not surprise anybody. It reinforces the development cooperation paradigm: “Our World in Data”, a major statistical database compiled by the University of Oxford (funded, coincidentally, by the Bill & Melinda Gates Foundation) announces in 2020 that “where GDP per capita is high people live longer; children die less often; mothers die less often; doctors can focus on fewer patients; more people have access to clean drinking water and electricity; they can travel more; have more free time; better access to education and improved learning outcomes; and people are more satisfied with their lives”.⁸ The same study goes on to show that among countries at the same income level, health results can be very different and other studies have shown a higher correlation of health results with lower inequalities than with GDP per capita.

⁷ <https://ideas.repec.org/p/iza/izadps/dp13367.html>

⁸ <https://ourworldindata.org/exemplars-in-global-health>

But the main message for policy-makers is that countries need to get richer, not more sustainable, and that to climb the ladder and become “developed” they should follow the advice of their richer peers.

Teivo Teivanen, Professor of World Politics at the University of Helsinki, has argued that “various pedagogical tools have been used to construct the idea that the poor countries of the developing world have childlike features and that they therefore need to be educated, and led, by the developed countries, the adults. Even if the idea is seldom presented so bluntly, it forms part of many if not most development discourses”.⁹ In that paradigm, “poor” countries

get no credit in terms of ranking for not contributing to climate change or to air pollution or AMR.

SDG 17.19 of the 2030 Agenda promised “to develop measurements of progress on sustainable development that complement GDP”. COVID-19 shows that this is not a statistical subtlety but a matter of life and death. It is high time that “A” grades are distributed where due, and not exclusively to rich students.

⁹ https://www.researchgate.net/publication/232872230_The_Pedagogy_of_Global_Development_the_promotion_of_electoral_democracy_and_the_Latin_Americanisation_of_Europe

Table 3.1.

Top ranking of the Global Health Security Index: The better prepared were among the worst performers during the COVID-19 pandemic

Country	GHS Index Score	Deaths per million*
United States	83.5	480
United Kingdom	77.9	680
Netherlands	75.6	359
Australia	75.5	9
Canada	75.3	237
Thailand	73.2	0.8
Sweden	72.1	568
Denmark	70.4	106
Korea, Rep	70.2	6
Finland	68.7	59
France	68.2	464
Slovenia	67.2	59
Switzerland	67	229
Germany	66	110
Spain	65.9	609

* Deaths caused by COVID-19 per million inhabitants as of 3 August 2020.

Sources: GHS Index (<https://www.ghsindex.org/>) for the preparedness index and Worldometer COVID-19 Data (<https://www.worldometers.info/coronavirus/#countries>) for the COVID-19 deaths per million figures.